



[4910-13-P]

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2012-0808; Directorate Identifier 2010-NM-170-AD]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Airbus Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to adopt a new airworthiness directive (AD) for Airbus Model A330-200 and A330-300 series airplanes, and Model A340-200 and A340-300 series airplanes. This proposed AD was prompted by reports of an elevator blocked in the down position due to two independent failures; first, the inability of a servo control to switch to active mode because it was not detected by a flight control computer, and second, an internal hydraulic leak due to the deterioration of an O-ring seal on a solenoid. This proposed AD would require, depending on airplane configuration, modifying three flight control primary computers (FCPCs); modifying two flight control secondary computers (FCSCs); revising the airplane flight manual (AFM) to include certain information; replacing certain O-rings; and checking part number, and replacing certain O-ring seals if needed. We are proposing this AD to detect and correct O-rings with incorrect part number whose deterioration could lead to improper sealing of solenoid valves, and to correct FCPC and FCSC software to allow better control of elevator positioning; both conditions, if not corrected, could

lead to the loss of elevator control on takeoff, and potentially reduce the controllability of the airplane.

**DATES:** We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: (202) 493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact Airbus SAS – Airworthiness Office – EAL, 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, France; telephone +33 5 61 93 36 96; fax +33 5 61 93 45 80; e-mail [airworthiness.A330-A340@airbus.com](mailto:airworthiness.A330-A340@airbus.com); Internet <http://www.airbus.com>. You may review copies of the referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

## **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Operations office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (telephone (800) 647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Vladimir Ulyanov, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue SW., Renton, Washington 98057-3356; phone: (425) 227-1138; fax: (425) 227-1149; email: [Vladimir.Ulyanov@faa.gov](mailto:Vladimir.Ulyanov@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2012-0808; Directorate Identifier 2010-NM-170-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD based on those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will

also post a report summarizing each substantive verbal contact we receive about this proposed AD.

## **Discussion**

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued EASA Airworthiness Directive 2010-0081, dated April 27, 2010 (referred to after this as “the MCAI”), to correct an unsafe condition for the specified products. The MCAI states:

This [EASA] AD deals with the two following points:

- Case of an elevator blocked in down position due to two independent failures one of which is hidden:

Each elevator is controlled by two servo controls. In normal operation:

- one servo control in active mode controlled by PRIM 1 (Green servo control),
- one servo control in damping mode (Yellow or Blue servo control) monitored by PRIM 2.

Change from active mode to damped mode is obtained by means of a mode selector which is controlled by two identical solenoid valves housed on the servo control. The sealing of each solenoid valve is ensured by four O-ring seals.

During pre-flight control checks, the flight crew of an A330-200 aeroplane observed that one of the elevators was blocked in down position, the ECAM screen displaying “F/CTL PRIM 1 PITCH FAULT”.

This condition was due to two independent failures, one of which was dormant, which occurred on one of the elevators.

Investigations revealed that the origin of the elevator malfunction was due to the inability of the Yellow servo control to switch to active mode.

This inability:

- was caused by an internal hydraulic leak due to the deterioration of an O-ring seal on a solenoid valve,

- was not detected by the PRIM 2 computer nor announced to the flight crew.

- Incorrect Part Number (P/N) for solenoid valve O-ring seals in IPC [illustrated parts catalog]:

An incorrect O-ring seal P/N in IPC 27-34-51-1 could have led to the installation of O-ring seals incompatible with the hydraulic fluid, causing them to deteriorate.

These conditions if not detected could lead to the loss of elevator [control] on takeoff and, potentially reduce the controllability of the aeroplane.

The aim of EASA AD 2007-0009 was to:

- take over the requirements of AD F-2004-158, and

- require the terminating action for § (1), (2) and (4) of this AD by introducing new capped seals on solenoid valves for A330-200 only.

This new [EASA] AD \* \* \* requires the embodiment of the latest software standard on the three Flight Control Primary Computers (FCPC) and on the two Flight Control Secondary Computers (FCSC) [by modifying the FCPCs and FCSCs] \* \* \*.

The modification is accomplished either by replacing the FCPCs and FCSCs with new FCPCs and FCSCs, or by replacing or reprogramming the on-board replaceable modules in the FCPCs and FCSCs. Required actions also include, depending on airplane configuration, the following actions: revising the airplane

flight manual (AFM) to include certain information; replacing certain O-rings; and checking part number, and replacing certain O-ring seals if needed. You may obtain further information by examining the MCAI in the AD docket.

### **Relevant Service Information**

Airbus has issued the following service information:

- Airbus All Operators Telex (AOT) A330-27A3129, Revision 01, dated July 16, 2004.
- Airbus Mandatory Service Bulletin A330-27-3136, Revision 01, dated July 19, 2006.
- Airbus Mandatory Service Bulletin A330-27-3146, Revision 01, dated September 3, 2008.
- Airbus Mandatory Service Bulletin A330-27-3148, Revision 01, including Appendix 1, dated October 9, 2008.
- Airbus Mandatory Service Bulletin A330-27A3131, Revision 01, including Appendix 01, dated March 3, 2005.
- Airbus Mandatory Service Bulletin A340-27-4144, including Appendix 1, dated October 19, 2009.
- Airbus Mandatory Service Bulletin A340-27-4146, dated June 1, 2007.
- Airbus Mandatory Service Bulletin A340-27-4148, including Appendix 1, dated June 13, 2008.
- Airbus Mandatory Service Bulletin A340-27A4130, Revision 01, including Appendix 01, dated March 3, 2005.

- Airbus Service Bulletin A330-27-3134, Revision 01, dated May 12, 2006.
- Airbus Service Bulletin A330-27-3144, Revision 01, including Appendix 1, dated July 16, 2009.
- Airbus Service Bulletin A330-27-3145, dated December 16, 2008.
- Airbus Service Bulletin A340-27-4145, dated December 16, 2008.
- Airbus Temporary Revision TR4, Issue 1.0, “TR 4.02.00/25 Issue 2 – Undetected Elevator Control Loss in Case of Dual Failure,” dated November 26, 2009, to the Airbus A330/A340 Airplane Flight Manual.
- Airbus Temporary Revision TR22, Issue 1.0, “TR 4.02.00/40 Issue 2 – Undetected Elevator Control Loss in Case of Dual Failure,” dated November 26, 2009, to the Airbus A330/A340 Airplane Flight Manual.

The actions described in this service information are intended to correct the unsafe condition identified in the MCAI.

#### **FAA’s Determination and Requirements of This Proposed AD**

This product has been approved by the aviation authority of another country, and is approved for operation in the United States. Pursuant to our bilateral agreement with the State of Design Authority, we have been notified of the unsafe condition described in the MCAI and service information referenced above. We are proposing this AD because we evaluated all pertinent information and determined an unsafe condition exists and is likely to exist or develop on other products of the same type design.

### **Differences Between This AD and the MCAI or Service Information**

EASA AD 2010-0081, dated April 27, 2010, contains additional requirements to modify the four elevator servo controls installed on Model A330-200 series airplanes, as specified in Airbus Service Bulletin A330-27-3134. This AD does not contain those requirements because those actions are already mandated by FAA AD 2008-06-07, Amendment 39-15419 (73 FR 13103, March 12, 2008; as corrected on April 15, 2008 (73 FR 20367), and must be accomplished within 17 months after April 16, 2008 (the effective date of AD 2008-06-07, Amendment 39-15419). EASA AD 2010-0081, dated April 27, 2010, also contains additional requirements to amend the airplane flight manual to include the operational procedure specified in paragraph (n) of this proposed AD. This proposed AD does not include that requirement, because that information is already contained in the U.S. operators' AFMs.

### **Costs of Compliance**

Based on the service information, we estimate that this proposed AD would affect about 41 products of U.S. registry. We also estimate that it would take about 5 work-hours per product to comply with the basic requirements of this proposed AD. The average labor rate is \$85 per work-hour. Required parts would cost about \$0 per product. Where the service information lists required parts costs that are covered under warranty, we have assumed that there will be no charge for these costs. As we do not control warranty coverage for affected parties, some parties may incur costs higher than estimated here. Based on these figures, we estimate the cost of the proposed AD on U.S. operators to be \$17,425, or \$425 per product.



### **Authority for This Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in "Subtitle VII, Part A, Subpart III, Section 44701: General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this proposed regulation:

1. Is not a "significant regulatory action" under Executive Order 12866;
2. Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979);

3. Will not affect intrastate aviation in Alaska; and
4. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared a regulatory evaluation of the estimated costs to comply with this proposed AD and placed it in the AD docket.

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

#### **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

#### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new AD:

**Airbus:** Docket No. FAA-2012-0808; Directorate Identifier 2010-NM-170-AD.

#### **(a) Comments Due Date**

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Airbus airplanes, certificated in any category, specified in paragraphs (c)(1) and (c)(2) of this AD.

(1) Model A330-201, -202, -203, -223, -243, -301, -302, -303, -321, -322, -323, -341, -342, and -343 airplanes, all manufacturer serial numbers (MSN).

(2) Model A340-211, -212, -213, -311, -312, and -313 airplanes, all MSN.

**(d) Subject**

Air Transport Association (ATA) of America Code 27: Flight controls.

**(e) Reason**

This AD was prompted by reports of an elevator blocked in the down position due to two independent failures; first, the inability of a servo control to switch to active mode because it was not detected by a flight control computer, and second, an internal hydraulic leak due to the deterioration of an O-ring seal on a solenoid. We are issuing this detect and correct O-rings with incorrect part number whose deterioration could lead to improper sealing of solenoid valves, and to correct FCPC and FCSC software to allow better control of elevator positioning; both conditions, if not corrected, could lead to the loss of elevator control on takeoff, and potentially reduce the controllability of the airplane.

**(f) Compliance**

You are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done.

**(g) Replace O-ring Seals For Elevator Servo Controls Installed in Damping Position on Model A330-200 Series Airplanes Only**

For all Airbus Model A330-200 series airplanes, except those on which Airbus modifications 53969 and 54833 have been embodied in production: At the later of the times specified in paragraphs (g)(1) and (g)(2) of this AD, replace the O-ring seals installed on the two solenoid valves of each servo control using new O-ring seals, in accordance with Airbus All Operators Telex (AOT) A330-27A3129, Revision 01, dated July 16, 2004.

(1) Before the accumulation of 3,000 flight cycles by the servo control since first installation on an airplane, or 3,000 flight cycles since the installation of the solenoid valve on the servo control.

(2) Within 700 flight hours after the effective date of this AD.

**(h) Replace O-ring Seals on Spare Elevator Servo Controls Whose O-ring Seals Were Not Replaced as Required by Paragraph (g) of This AD**

For all Airbus Model A330-200 series airplanes, except those on which Airbus modifications 53969 and 54833 have been embodied in production: As of the effective date of this AD, before the installation of an elevator servo control on an Airbus Model A330-200 airplane, replace the O-ring seals installed on the two spare servo control solenoid valves using new O-ring seals, in accordance with Airbus AOT A330-27A3129, Revision 01, dated July 16, 2004.

**(i) Replace O-ring Seals with Part Number (P/N) MS28775-XXX or a Part Number that Cannot Be Identified**

For Model A330-200 series airplanes which have been modified as specified in Airbus AOT A330-27A3129, dated June 24, 2004, but which have not been modified as

specified in Airbus AOT A330-27A3129, Revision 01, dated July 16, 2004; except those airplanes on which Airbus modifications 53969 and 54833 have been embodied in production: Within 15 days after the effective date of this AD, check the (P/N) of the seals installed on the solenoid valve of the servo control of the elevator in the damping position. If the seals installed have P/N MS28775-XXX or a part number that cannot be identified, before further flight, replace the seals with new seals using a part number listed in paragraph (i)(1), (i)(2), or (i)(3) of this AD, in accordance with Airbus AOT A330-27A3129, Revision 01, dated July 16, 2004.

(1) IPC 27-34-51-1 item 130: NAS1611-011 or NAS1611-011A;

(2) IPC 27-34-51-1 item 140: NAS1611-012 or NAS1611-012A; or

(3) IPC 27-34-51-1 item 150: NAS1611-013 or NAS1611-013A.

**(j) Replace O-ring Seals on Model A330-200, A330-300, A340-200, and A340-300 Series Airplanes**

For Model A330-200, A330-300, A340-200, and A340-300 series airplanes equipped with elevator servo controls P/N SC4800-2/-4/-7/-8 or SC4800-7/-8 modified into P/N SC4800-7A/-9, as specified in Airbus Service Bulletin A340-27-4083 or Airbus Service Bulletin A330-27-3076: Within 1,400 flight hours after the effective date of this AD, replace the O-ring seals installed on the two solenoid valves of each elevator servo control in damping position (except for Model A330-200 series airplanes which have to comply with paragraph (g) of this AD), and in active position, using a new O-ring seal P/N NAS1611-XXX or P/N NAS1611-XXXXA, in accordance with the Accomplishment Instructions of Airbus Mandatory Service Bulletin A330-27A3131, Revision 01, excluding Appendix 01, dated March 3, 2005 (for Model A330 series airplanes); or

Airbus Mandatory Service Bulletin A340-27A4130, Revision 01, excluding Appendix 01, dated March 3, 2005 (for Model A340 series airplanes).

**(k) Replace O-ring Seals on Spare Elevator Servo Controls on Model A330-200, A330-300, A340-200, and A340-300 Series Airplanes**

For the spare elevator servo controls P/N SC4800-2/-4/-7/-8 or SC4800-7/-8 modified into P/N SC4800-7A/-9, as specified in Airbus Service Bulletin A340-27-4083 or Airbus Service Bulletin A330-27-3076: Before the installation of a spare elevator servo control on an airplane, replace the O-ring seals installed on the two spare servo control solenoid valves using a new O-ring seal P/N NAS1611-XXX or P/N NAS1611-XXXA, in accordance with the Accomplishment Instructions of Airbus Mandatory Service Bulletin A330-27A3131, Revision 01, excluding Appendix 01, dated March 3, 2005 (for Model A330 series airplanes); or Airbus Mandatory Service Bulletin A340-27A4130, Revision 01, excluding Appendix 01, dated March 3, 2005 (for Model A340 series airplanes).

**(l) Modify the Flight Control Primary Computers (FCPCs)**

For all Airbus Model A330-200 and A330-300 series airplanes, except those on which both Airbus modifications 53468 and 55697 have been embodied in production; and for all Airbus Model A340-200 and A340-300 series airplanes, except those on which both modifications 55879 and 55697 have been embodied in production: Within 24 months after the effective date of this AD, modify the three FCPCs in accordance with the Accomplishment Instructions of the applicable service bulletin identified in paragraphs (l)(1) or (l)(2) of this AD.

(1) Airbus Service Bulletin A330-27-3144, Revision 01, excluding Appendix 1, dated July 16, 2009; or Airbus Mandatory Service Bulletin A330-27-3148, Revision 01, excluding Appendix 1, dated October 9, 2008 (for Model A330 series airplanes).

(2) Airbus Mandatory Service Bulletin A340-27-4144, excluding Appendix 1, dated October 19, 2009; or Airbus Mandatory Service Bulletin A340-27-4148, excluding Appendix 1, dated June 13, 2008 (for Model A340 series airplanes).

**(m) Modify the Flight Control Secondary Computers (FCSCs)**

For all Airbus Model A330-200 and A330-300 series airplanes, except those on which both Airbus modifications 53468 and 55697 have been embodied in production, and for all Airbus Model A340-200 and A340-300 series airplanes, except those on which both modifications 55879 and 55697 have been embodied in production: Within 24 months after the effective date of this AD, modify both FCSCs, in accordance with the Accomplishment Instructions of the applicable service bulletin identified in paragraphs (m)(1) or (m)(2) of this AD.

(1) Airbus Mandatory Service Bulletin A330-27-3146, Revision 01, dated September 3, 2008; or Airbus Service Bulletin A330-27-3145, dated December 16, 2008 (for Model A330 airplanes).

(2) Airbus Mandatory Service Bulletin A340-27-4146, June 1, 2007; or Airbus Service Bulletin A340-27-4145, dated December 16, 2008 (for Model A340 airplanes).

**(n) Revise the Airplane Flight Manual**

Before further flight, after doing the applicable actions required by both paragraphs (l) and (m) of this AD, remove the following procedure from the airplane

flight manual, if inserted, in accordance with the instructions contained in Airbus Temporary Revision TR4, Issue 1.0, “TR 4.02.00/25 Issue 2 – Undetected Elevator Control Loss in Case of Dual Failure,” dated November 26, 2009, to the Airbus A330/A340 Airplane Flight Manual; and Airbus Temporary Revision TR22, Issue 1.0, “TR 4.02.00/40 Issue 2 – Undetected Elevator Control Loss in Case of Dual Failure,” dated November 26, 2009, to the Airbus A330/A340 Airplane Flight Manual.

**Undetected Elevator Control Loss in Case of Dual Failure**

On ground, before takeoff until takeoff power thrust setting, apply the following procedure.

- In the case of a F/CTL PRIM 1 FAULT, or F/CTL PRIM 1 PITCH FAULT:  
Turn off PRIM 1, then back on to perform a FCPC PRIM 1 reset.
  - If successful:  
Perform the normal pre-flight Flight Control check.
  - If unsuccessful:  
Return to the gate and require appropriate maintenance actions.
- In the case of a F/CTL ELEV SERVO FAULT:  
Return to the gate and require appropriate maintenance actions.

**(o) Credit for Previous Actions**

This paragraph provides credit for certain actions described in the following paragraphs.

(1) This paragraph provides credit for replacements of the O-ring seals, as required by paragraphs (j) and (k) of this AD, if those actions were performed before the effective date of this AD using Airbus Service Bulletin A330-27A3131, dated September 22, 2004 (for Model A330 airplanes); or Airbus Service Bulletin 340-27A4130, dated September 22, 2004 (for Model A340 airplanes).



(2) This paragraph provides credit for modifications of the FCPC, as required by paragraph (l) of this AD, if those actions were performed before the effective date of this AD using Airbus Service Bulletin A330-27-3144, dated April 2, 2009 (for Model A330 airplanes); or Airbus Service Bulletin A340-27-3148, dated July 17, 2008 (for Model A340 airplanes).

(3) This paragraph provides credit for modifications of the FCSCs, as required by paragraph (m) of this AD, if those actions were performed before the effective date of this AD using Airbus Mandatory Service Bulletin A330-27-3146, dated June 1, 2007 (for Model A330 airplanes).

**(p) Terminating Action**

Installation of modified servo-controls at all positions on Model A330-200 airplanes in accordance with the Accomplishment Instructions of Airbus Service Bulletin A330-27-3134, Revision 01, dated May 12, 2006; and Airbus Mandatory Service Bulletin A330-27-3136, Revision 01, dated July 19, 2006; terminates the actions required by paragraphs (g), (h), and (i) and of this AD.

**(q) Other FAA AD Provisions**

The following provisions also apply to this AD:

**(1) Alternative Methods of Compliance (AMOCs):** The Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the

International Branch, send it to ATTN: Vladimir Ulyanov, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue SW., Renton, Washington 98057-3356; telephone (425) 227-1138; fax (425) 227-1149. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office. The AMOC approval letter must specifically reference this AD.

**(2) Airworthy Product:** For any requirement in this AD to obtain corrective actions from a manufacturer or other source, use these actions if they are FAA-approved. Corrective actions are considered FAA-approved if they are approved by the State of Design Authority (or their delegated agent). You are required to assure the product is airworthy before it is returned to service.

**(r) Related Information**

(1) Refer to MCAI European Aviation Safety Agency (EASA) Airworthiness Directive 2010-0081, dated April 27, 2010, and the service information specified in paragraphs (r)(1)(i) through (r)(1)(xv) of this AD, for related information.

(i) Airbus AOT A330-27A3129, Revision 01, dated July 16, 2004.

(ii) Airbus Mandatory Service Bulletin A330-27-3136, Revision 01, dated July 19, 2006.

(iii) Airbus Mandatory Service Bulletin A330-27-3146, Revision 01, dated September 3, 2008.

(iv) Airbus Mandatory Service Bulletin A330-27-3148, Revision 01, excluding

Appendix 1, dated October 9, 2008.

(v) Airbus Mandatory Service Bulletin A330-27A3131, Revision 01, excluding Appendix 01, dated March 3, 2005.

(vi) Airbus Mandatory Service Bulletin A340-27-4144, excluding Appendix 1, dated October 19, 2009.

(vii) Airbus Mandatory Service Bulletin A340-27-4146, dated June 1, 2007.

(viii) Airbus Mandatory Service Bulletin A340-27-4148, excluding Appendix 1, dated June 13, 2008.

(ix) Airbus Mandatory Service Bulletin A340-27A4130, Revision 01, excluding Appendix 01, dated March 3, 2005.

(x) Airbus Service Bulletin A330-27-3134, Revision 01, dated May 12, 2006.

(xi) Airbus Service Bulletin A330-27-3144, Revision 01, excluding Appendix 1, dated July 16, 2009.

(xii) Airbus Service Bulletin A330-27-3145, dated December 16, 2008.

(xiii) Airbus Service Bulletin A340-27-4145, dated December 16, 2008.

(xiv) Airbus Temporary Revision TR4, Issue 1.0, “TR 4.02.00/25 Issue 2 – Undetected Elevator Control Loss in Case of Dual Failure,” dated November 26, 2009, to the Airbus A330/A340 Airplane Flight Manual.

(xv) Airbus Temporary Revision TR22, Issue 1.0, “TR 4.02.00/40 Issue 2 – Undetected Elevator Control Loss in Case of Dual Failure,” dated November 26, 2009, to the Airbus A330/A340 Airplane Flight Manual.

(2) For service information identified in this AD, contact Airbus SAS – Airworthiness Office – EAL, 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, France; telephone +33 5 61 93 36 96; fax +33 5 61 93 45 80; e-mail [airworthiness.A330-A340@airbus.com](mailto:airworthiness.A330-A340@airbus.com); Internet <http://www.airbus.com>. You may review copies of the referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

Issued in Renton, Washington, on August 3, 2012.

Ali Bahrani,  
Manager,  
Transport Airplane Directorate,  
Aircraft Certification Service.

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